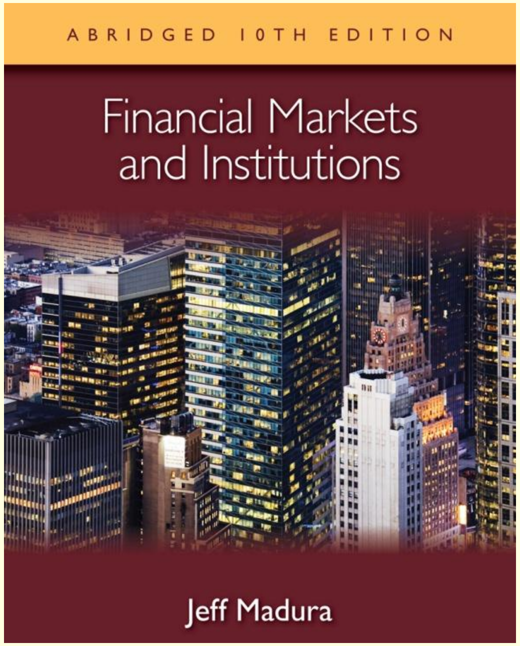
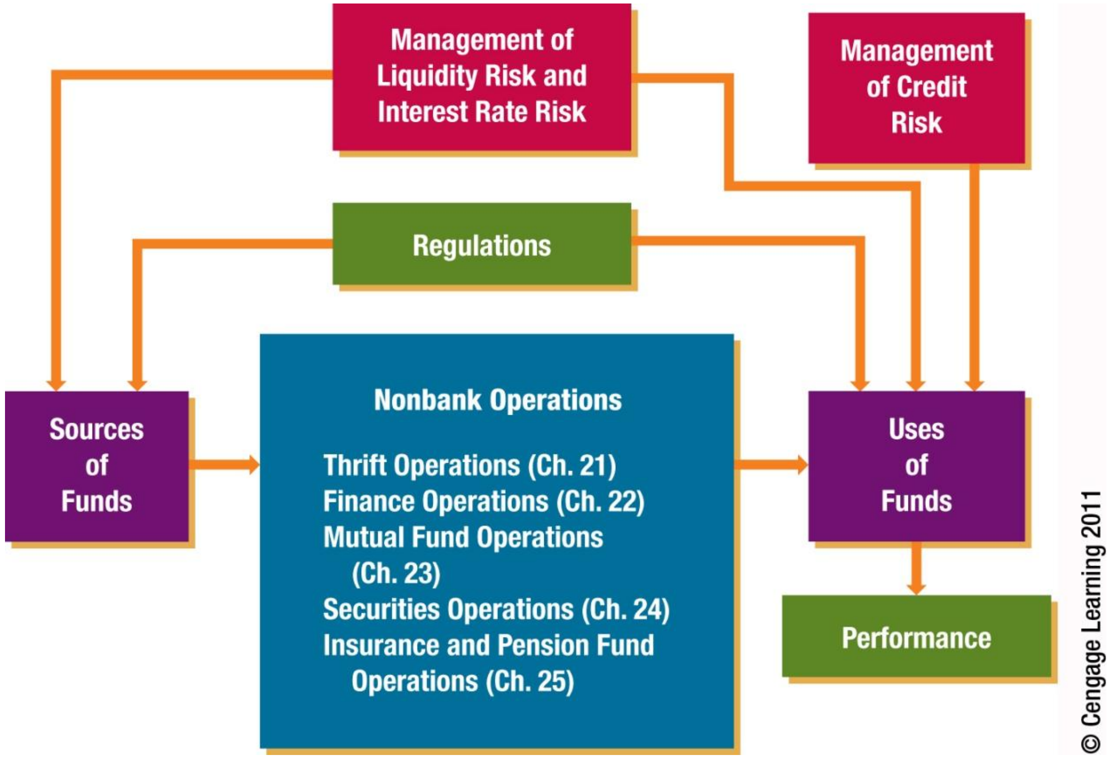
Financial Markets and Institutions
Abridged 10th Edition

by Jeff Madura



Part 7 Nonbank Operations



21 Thrift Operations

Chapter Objectives

- identify the key sources and uses of funds for savings institutions
- describe the exposure of savings institutions to various types of risk
- explain how savings institutions manage interest rate risk
- explain the valuation of a savings institution
- describe how savings institutions have been exposed to recent crises
- provide a background on credit unions, including their main sources and uses of funds

Ownership of Savings Institutions

- Savings institutions are classified as either stock owned or **mutual** (owned by depositors).
- Because of the difference in owner control, stock-owned institutions are more susceptible to unfriendly takeovers.
- Some SIs have been acquired by commercial banks that wanted to diversify their operations.

Regulation of Savings Institutions

- **Deposit Insurance**

  The insuring agency for SIs is the Deposit Insurance Fund (DIF), which is administered by the FDIC and insures deposits. The insurable limit is presently $250,000.

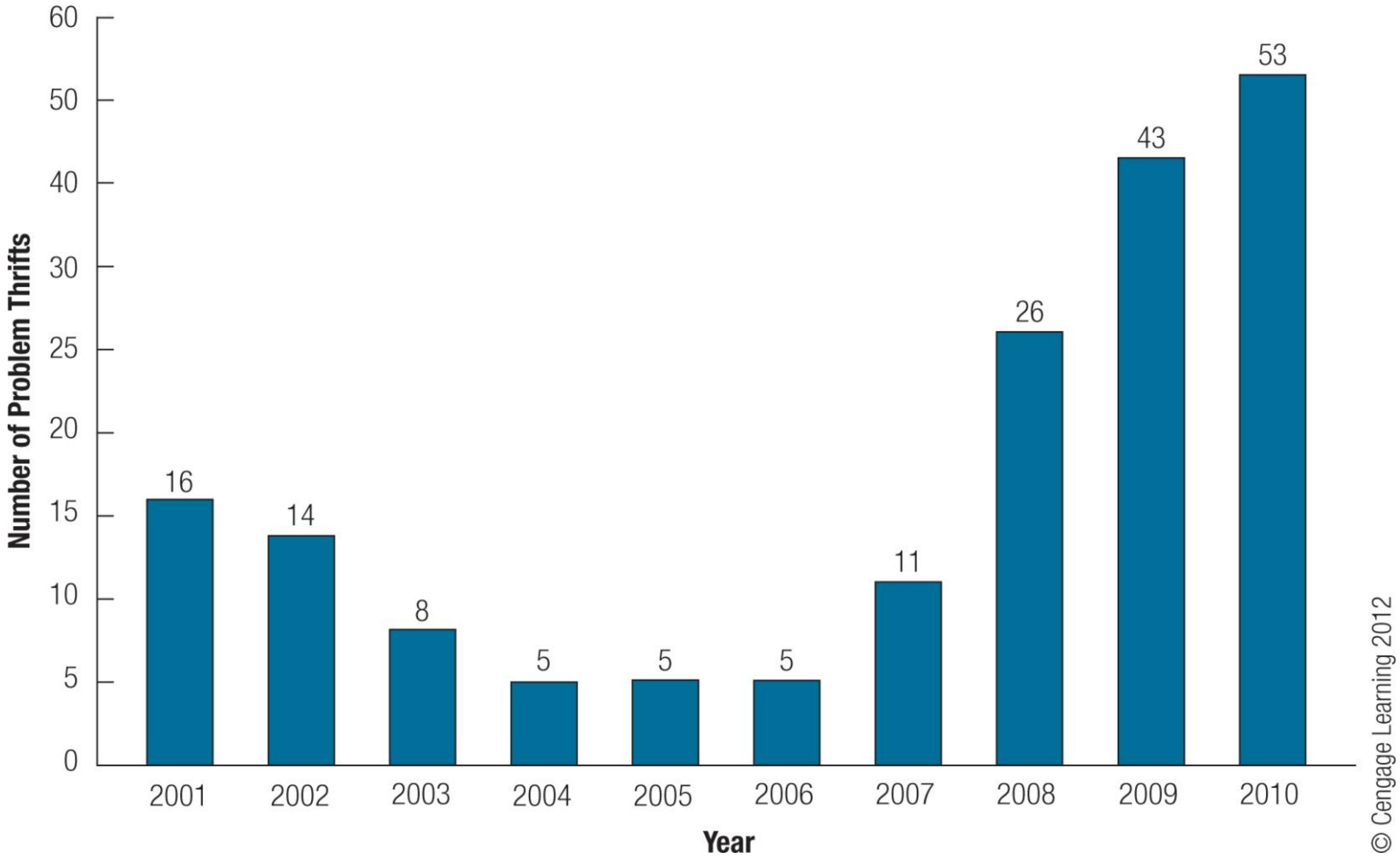
- **Regulatory Assessment of Savings Institutions**

  Regulators conduct periodic on-site examinations of SIs using the CAMELS rating system in a manner similar to commercial banks.

- **Deregulation of Services**

  In recent years, SIs have been granted more flexibility to diversify the products and services they provide.

Exhibit 21.1 Problem Thrifts over Time (Based on CAMELS Ratings)



Sources and Uses of Funds

Sources of Funds

- **Deposits**

  Savings institutions obtain most of their funds from a variety of savings and time deposits, including passbook savings, retail certificates of deposit (CDs), and money market deposit accounts (MMDAs).

- **Borrowed Funds**

  Can borrow in the federal funds market, through repurchase agreements (repos), or at the Federal Reserve.

- **Capital**

  Primarily composed of retained earnings and funds obtained from issuing stock.

Uses of Funds

- **Cash** – To satisfy reserve requirements and accommodate withdrawal requests.
- **Mortgages** - The primary asset of SIs.
- **Mortgage-Backed Securities** - Some savings institutions purchase mortgage-backed securities.
- **Other Securities** - Savings institutions invest in Treasury bonds and corporate bonds which provide liquidity.
- **Consumer and Commercial Loans** - Can reduce their heavy exposure to mortgage loans.

Uses of Funds (Cont.)

- **Other Uses of Funds**
  - Savings institutions can provide temporary financing to other institutions through the use of repurchase agreements.
  - They can lend funds on a short-term basis through the federal funds market.
  - Both methods allow them to efficiently use funds that they will have available for only a short period of time.

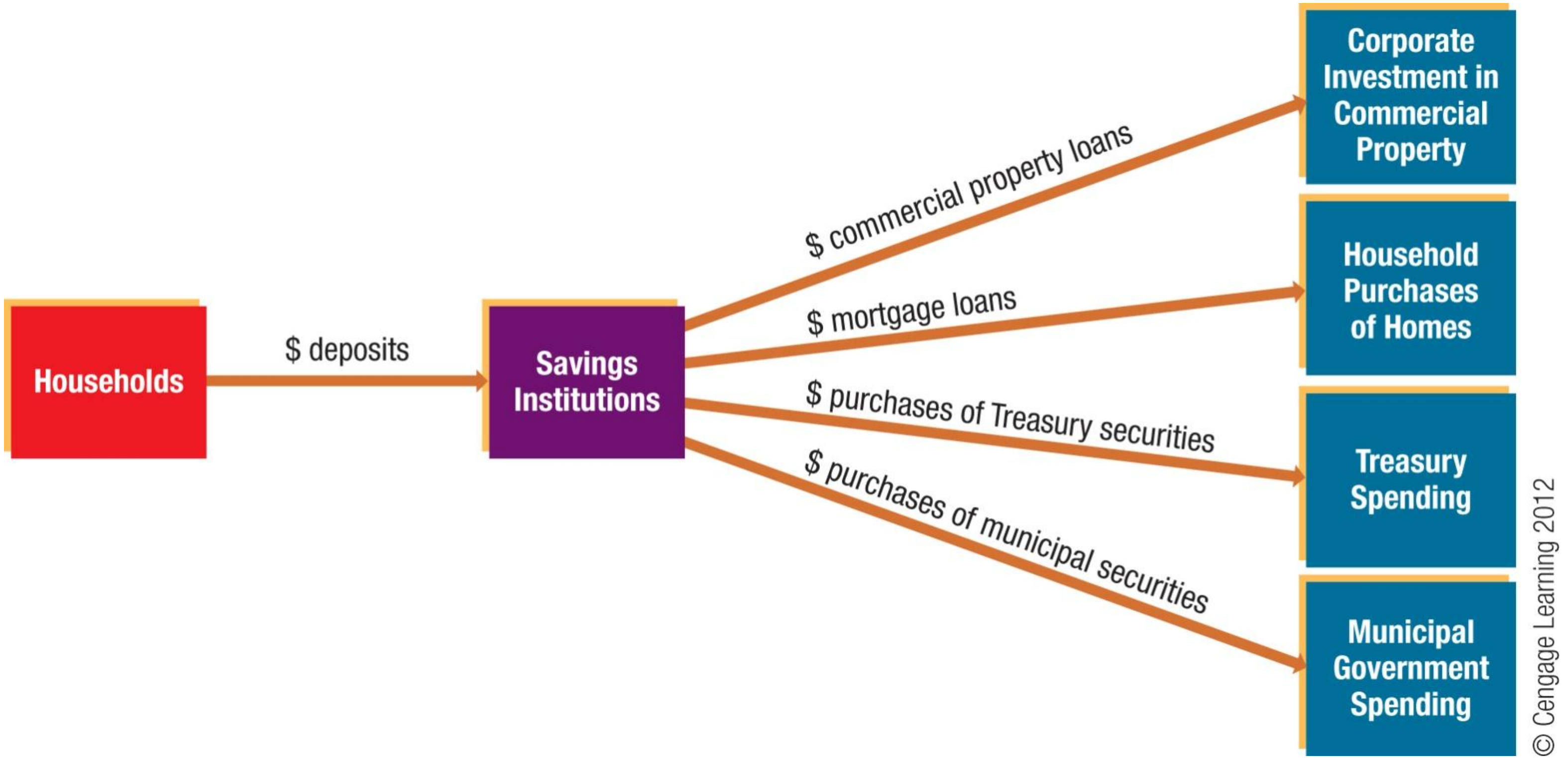
Balance Sheet of Savings Institutions

- The sources of funds represent liabilities or equity of an SI, while the uses of funds represent assets.
- Each SI determines its own composition of liabilities and assets, which determines its specific operations.

Exhibit 21.2 Balance Sheet of Ashland Savings as of June 30, 2011

ASSETS	DOLLAR AMOUNT (IN MILLIONS)	PROPORTION OF TOTAL ASSETS	LIABILITIES AND STOCK HOLDERS' EQUITY	DOLLAR AMOUNT (IN MILLIONS)	PROPORTION OF TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY
Cash (includes required reserves)	$ 60	6%	Savings deposits	$ 100	10%
Single-family mortgages	500	50%	NOW accounts	50	5%
Multifamily mortgages	50	5%	Money market deposit accounts	300	30%
Other mortgages	40	4%	Short-term CDs	360	36%
Mortgage-backed securities	70	7%	CDs with maturities beyond one year	100	10%
Other securities	100	10%			
Consumer loans	70	7%			
Commercial loans	40	4%			
Fixed assets	70	7%	Common stock issued	50	5%
			Retained earnings	40	4%
TOTAL ASSETS	$1,000	100%	TOTAL LIABILITIES AND STOCK HOLDERS' EQUITY	$1,000	100%

Exhibit 21.3 How Savings Institutions Finance Economic Growth



Sources and Uses of Funds

Interaction with Other Financial Institutions

When SIs obtain and use funds, they commonly interact with other financial institutions.

Participation in Financial Markets

When SIs perform their various functions, they rely on various financial markets, as summarized in Exhibit 21.5.

Exhibit 21.4 Interactions between Savings Institutions and Other Financial Institutions

TYPE OF FINANCIAL INSTITUTION	INTERACTION WITH SAVINGS INSTITUTIONS
Commercial banks	• Compete with SIs in attracting deposits, providing consumer loans, and providing commercial loans. • Have merged with SIs in recent years.
Finance companies	• Compete with SIs in providing consumer and commercial loans.
Money market mutual funds	• Compete with SIs in attracting short-term investments from investors.
Investment companies and brokerage firms	• Serve SIs that wish to engage in interest rate swaps and interest rate caps. • Have agreements with SIs to offer brokerage services to their customers.
Insurance companies	• Purchase mortgages from SIs in the secondary market.

Exhibit 21.5 Participation of Savings Institutions in Financial Markets

FINANCIAL MARKET	HOW SAVINGS INSTITUTIONS PARTICIPATE IN THIS MARKET
Money markets	• Compete with other depository institutions for short-term deposits by issuing commercial paper.
Mortgage markets	• Sell mortgages in the secondary market and issue mortgage-backed securities.
Bond markets	• Purchase bonds for their investment portfolios. • Issue bonds to obtain long-term funds.
Futures markets	• Hedge against interest rate movements by taking positions in interest rate futures.
Options markets	• Hedge against interest rate movements by purchasing put options on interest rate futures.
Swap markets	• Hedge against interest rate movements by engaging in interest rate swaps.

Exposure to Risk

Liquidity Risk

- Since SIs commonly use short-term liabilities to finance long-term assets, they depend on additional deposits to accommodate withdrawal requests.
- If new deposits are not sufficient, they can obtain funds through repurchase agreements or borrow funds in the federal funds market.

Credit Risk

- Because mortgages represent the primary asset, they are the main reason for credit risk at SIs.

Interest Rate Risk

- Some SIs rely on short-term deposits as sources of funds and use most of their funds to provide fixed-rate mortgages.
- The spread between interest revenue and interest expenses narrows when interest rates increase, which reduces their profitability.

Measurement of Interest Rate Risk

- SIs measure the gap between rate-sensitive assets and rate-sensitive liabilities to determine their exposure to interest rate risk.

Exhibit 21.6 Duration Schedule for Tucson Savings Institution (Dollar Amounts are in Thousands)

	RATE READJUSTMENT PERIOD							
ASSETS	LESS THAN 6 MONTHS	6 MONTHS TO 1 YEAR	1–3 YEARS	3–5 YEARS	5–10 YEARS	10–20 YEARS	OVER 20 YEARS	TOTAL
Adjustable-rate mortgages								
Amount ($)	$ 7,000	$15,000	$4,000	$1,000	$ 0	$ 0	$ 0	$27,000
Average duration (yr)	.30	.80	1.90	2.90	0	0	0	.91
Fixed-rate mortgages								
Amount ($)	500	500	1,000	1,000	2,000	10,000	5,000	20,000
Average duration (yr)	.25	.60	1.80	2.60	4.30	5.50	7.60	5.32
Investment securities								
Amount ($)	2,000	3,000	4,000	2,000	1,000	0	2,000	14,000
Average duration (yr)	.20	.70	1.70	3.20	5.30	0	8.05	2.65
Total amount ($)	$ 9,500	$18,500	$9,000	$4,000	$3,000	$10,000	$7,000	$61,000
								Asset duration = 2.76
LIABILITIES								
Fixed-maturity deposits								
Amount ($)	$14,000	$ 9,000	$2,000	$1,000	$0	$0	$0	$26,000
Average Duration (yr)	.30	.60	1.80	2.80	0	0	0	.62
NOW accounts								
Amount ($)	4,000	0	0	0	0	0	0	4,000
Average Duration (yr)	.40	0	0	0	0	0	0	.40
MMDAs								
Amount ($)	15,000	0	0	0	0	0	0	15,000
Average Duration (yr)	.20	0	0	0	0	0	0	.20
Passbook accounts								
Amount ($)	13,000	0	0	0	0		0	13,000
Average Duration (yr)	.40	0	0	0	0	0	0	.40
Total amount ($)	$46,000	$ 9,000	$2,000	$1,000	$0	$0	$0	$58,000
								Liability duration = .45

Adjustable-Rate Mortgages

- Adjustable rate mortgages enable SIs to maintain a more stable spread between interest revenue and interest expenses.
- While ARMs reduce the risks of SIs, they expose consumers to interest rate risk.

Interest Rate Futures Contracts

- An interest rate futures contract allows for the purchase of a specific amount of a debt security for a specified price at a future point in time.
- Some SIs use Treasury bond futures contracts because the cash flow characteristics of Treasury bonds resemble those of fixed-rate mortgages.

Management of Interest Rate Risk

Interest Rate Swaps

Allows an SI to swap fixed-rate payments (an outflow) for variable-rate payments (an inflow).

Conclusions about Managing Interest Rate Risk

- Although these strategies are useful, it is virtually impossible to eliminate the risk completely.
- Potential prepayment of mortgages.

Factors That Affect Cash Flows

$$\Delta V = f(\Delta E(CF), \Delta k)$$

- **Change in Economic Growth**
  - Economic growth can enhance an SI's cash flows by increasing household demand for consumer loans or mortgage loans and reducing loan defaults.
  - Demand for other financial services (such as real estate and insurance services) tends to be higher during periods of strong economic growth.
- **Change in the Risk-Free Interest Rate**

  An SI's cash flows may be inversely related to interest rate movements.

Valuation of a Savings Institution

Factors That Affect Cash Flows (Cont.)

- **Change in Industry Conditions**
  - Savings institutions are exposed to industry conditions such as regulatory constraints, technology, and competition.
  - If regulatory constraints are reduced, the expected cash flows of some SIs should increase.
- **Change in Management Abilities**
  - An SI has control over the composition of its managers and its organizational structure.
  - Its managers attempt to make internal decisions that will capitalize on the external forces (economic growth, interest rates, regulatory constraints)

Factors That Affect the Required Rate of Return

$$\Delta k = f(\Delta R_f, \Delta RP)$$

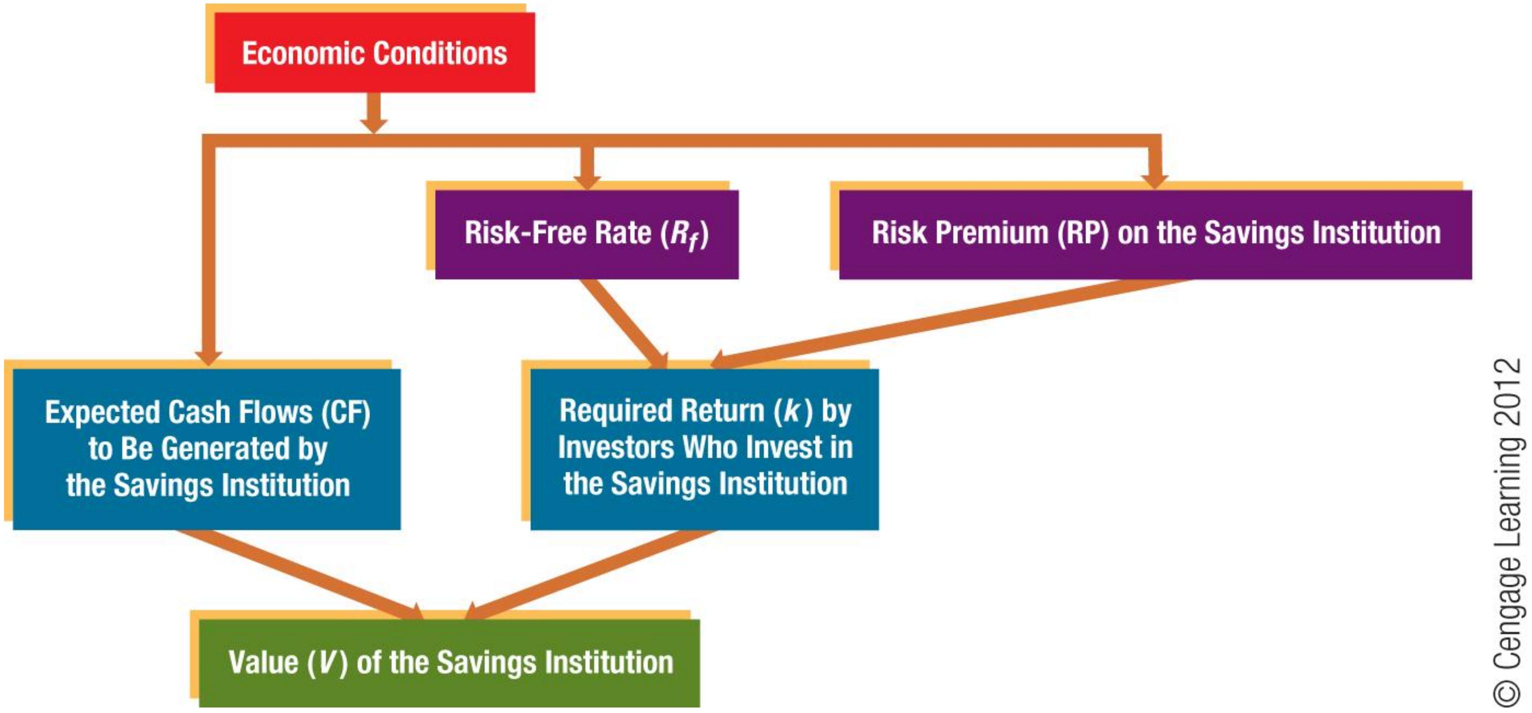
- **Change in the risk-free rate**

  An increase in the risk-free rate results in a higher return required by investors. High inflation, economic growth, and a high budget deficit place upward pressure on interest rates, whereas money supply growth places downward pressure on interest rates.

- **Change in the Risk Premium**

  If the risk premium on an SI rises, so will the required rate of return by investors who invest in the SI.

Exhibit 21.7 Framework for Valuing a Savings Institution



Exposure of Saving Institutions to Crises

Savings Institution Crisis in the Late 1980s

- One reason for the crisis of the late 1980s was an increase in interest rates.
- Those SIs that had provided long-term mortgages were adversely affected because the interest they earned on assets remained constant while the interest they paid on liabilities increased.
- Many SIs experienced a cash flow deficiency as a result of their loan losses, as the inflows from loan repayments were not sufficient to cover depositor withdrawals.

Savings Institution Crisis in the Late 1980s (Cont.)

- **Fraud** - Many SIs experienced financial problems because of various fraudulent activities.
- **Provisions of the FIRREA**
  - The Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) was enacted in 1989.
  - FIRREA increased penalties for officers of SIs and other financial institutions convicted of fraud, revised the regulation of SIs, and raised the capital requirements for SIs.
  - Allowed commercial banks to acquire SIs.
  - **The Resolution Trust Corporation (RTC)** was formed to deal with insolvent SIs. The RTC liquidated the assets of the insolvent SIs and reimbursed depositors or sold the SIs to other financial institutions.

Exposure of Saving Institutions to Crises

Credit Crisis of 2008–2009

- Several subprime lenders went bankrupt.
- Many SIs invested heavily in mortgage-backed securities without recognizing the credit risk of these securities.
- **Notable Failures during the Credit Crisis**
  - **Countrywide Financial** used an aggressive strategy to approve subprime mortgages. Many of these loans defaulted in 2007. In January 2008, Countrywide Financial was acquired by Bank of America.
  - **IndyMac** suffered major losses on its $32 billion portfolio of mortgages.
  - In September 2008, **Washington Mutual** became the largest depository institution ever to fail in the United States.

Exposure of Saving Institutions to Crises

Reform in Response to the Credit Crisis

The Financial Reform Act was implemented in 2010.

- **Mortgage Origination**

  Requires that savings institutions and other financial institutions granting mortgages to verify the income, job status, and credit history of mortgage applicants before approving mortgage applications.

- **Sales of Mortgage-Backed Securities**

  Requires that savings institutions and other financial institutions that sell mortgage-backed securities to retain 5 percent of the portfolio unless the portfolio meets specific standards that reflect low risk.

Reform in Response to the Credit Crisis (Cont.)

- **Financial Stability Oversight Council**

  Responsible for identifying risks to financial stability in the United States and makes regulatory recommendations to regulators that could reduce systemic risk, whereby the financial problems of savings institutions or other financial institutions spreads.

- **Orderly Liquidation**

  Assigned specific regulators the authority to determine whether any particular financial institution should be liquidated.

Exposure of Saving Institutions to Crises

Reform in Response to the Credit Crisis (Cont.)

- **Consumer Financial Protection Bureau**

  Responsible for regulating various consumer finance products and services that are offered by savings institutions and other financial institutions, such as online accounts and credit cards.

- **Trading of Derivative Securities**

  Requires that derivative securities be traded through a clearinghouse or exchange, rather than over the counter.

Credit Unions

Nonprofit organizations composed of members with a common bond, such as an affiliation with a particular labor union, church, university, or even residential area.

Ownership of Credit Unions

- Technically owned by the depositors.
- CUs can be federally or state chartered.

Advantages and Disadvantages of CUs

- Not taxed.
- Noninterest expenses are relatively low because their office and furniture are often donated or provided at a very low cost through the affiliation of their members.
- Employees may not have incentive to manage efficiently.

Deposit Insurance for Credit Unions

- About 90 percent of CUs are insured by the National Credit Union Share Insurance Fund (NCUSIF).
- CUs typically pay an annual insurance premium of about one-tenth of 1 percent of share deposits.

Regulatory Assessment of Credit Unions

- Federal CUs are supervised and regulated by the National Credit Union Administration (NCUA), while state-chartered CUs are regulated by their respective states.
- Examiners classify each CU into a specific risk category, ranging from Code 1 (low risk) to Code 5 (high risk).

Credit Union Sources of Funds

- **Deposits -** Credit unions obtain most of their funds from share deposits by members.
- **Borrowed Funds** – A CU can borrow from other CUs or from the Central Liquidity Facility (CLF).
- **Capital -** Like other depository institutions, CUs maintain capital. Their primary source of capital is retained earnings.

Credit Union Uses of Funds

- Use the majority of their funds for **loans** to members.
- Purchase **government and agency securities** to maintain adequate liquidity.

Exposure of Credit Unions to Risk

- **Liquidity Risk of Credit Unions**

  If a CU experiences an unanticipated wave of withdrawals without an offsetting amount of new deposits, it could become illiquid.

- **Credit Risk of Credit Unions**

  Because CUs concentrate on personal loans to their members, their exposure to credit (default) risk is primarily derived from those loans.

- **Interest Rate Risk of Credit Unions**

  Loans have short or intermediate maturities, so their asset portfolios are rate sensitive.

SUMMARY

- The main sources of funds for SIs are deposits and borrowed funds. The main uses of funds for SIs are mortgages, mortgage-backed securities, and other securities.
- Savings institutions are exposed to credit risk as a result of their heavy concentration in mortgages, mortgage-backed securities, and other securities. They attempt to diversify their investments to reduce credit risk. Savings institutions are highly susceptible to interest rate risk because their asset portfolios are typically less rate sensitive than their liability portfolios to interest rate movements.

SUMMARY (Cont.)

- Savings institutions can reduce their interest rate risk by using adjustable-rate mortgages instead of fixed rate mortgages so that the rate sensitivity of their assets is more similar to that of their liabilities. Alternatively, they can sell interest rate futures contracts, which would generate gains if interest rates increase. Third, they can engage in interest rate swaps in which they swap fixed rates for floating rates, which would generate gains if interest rates rise.
- The valuation of an SI is a function of its expected cash flows and the required return by its investors. The expected cash flows are influenced by economic growth, interest rate movements, regulatory constraints, and the abilities of the institution's managers. The required rate of return is influenced by the prevailing risk-free rate and the risk premium. The risk premium is lower when economic conditions are strong.

SUMMARY (Cont.)

- In the late 1980s, many SIs made very risky loans and investments and experienced heavy losses from loan defaults, adverse interest rate movements, and fraud. In the 2004–2006 period, many SIs pursued aggressive mortgage lending strategies, which led to major problems during the credit crisis of 2008–2009.
- Credit unions obtain most of their funds from share deposits by members. They use the majority of their funds for personal loans to members and therefore are exposed to credit risk.